



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,119	07/11/2003	Kelly Hudson	H147 1020.2	4101
<div>7590 03/27/2007 WOMBLE CARLYLE SANDRIDGE & RICE POST OFFICE BOX 7037 ATLANTA, GA 30357-0037</div>			<div>EXAMINER METZMAIER, DANIEL S</div>	
			<div>ART UNIT 1712</div>	<div>PAPER NUMBER</div>
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		03/27/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/618,119

Applicant(s)

HUDSON ET AL.

Examiner

Daniel S. Metzmaier

Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2006 and 02 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 37-57 and 59-78 is/are pending in the application.
- 4a) Of the above claim(s) 42-45, 49, 50 and 70 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 37-41, 46-48, 51-57 and 59-78 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claims 37-57 and 59-78 are pending.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 13 December 2006 has been entered.

Election/Restrictions

2. Applicant election without traverse of the species of Group I, claims 37, 38, 51-53, 62, and 64, wherein gas is mixed with a liquid and the gas is air and the liquid is fuel oil, was made in the reply filed on October 21, 2005 as modified by the interview conversation conducted on January 20, 2006. Claims 37-41, 46-48, 51-57 and 59-68 have been examined only to the extent that they read on the elected species.

3. Claims 42-45, 49-50 and 70 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on October 21, 2005 and as modified by the interview conversation conducted on January 20, 2006. A complete response to the Final Office Action would include cancellation of non-elected claims. Newly submitted claim 70 is directed to subject matter that has been withdrawn as a non-elected invention.

Specification

4. The disclosure is objected to because of the following informalities: the cross-noting section of the specification should be updated. To the extent a cross noting section appears in the transmittal sheet filed July 11, 2003, said amendment is non-compliant and further requires updating.

The footnote on page 9 should be incorporated into the appropriate portion of the specification since published patents generally have footnotes only for tables and figures.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 37-57, 59-69 and 71-78 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 37, 54 and 59, including the claims dependent thereon are deemed as having new matter. More specifically, the basis for the limitation "the flow path being substantially free of cavitation" has not been pointed out by applicant and the examiner

Art Unit: 1712

has been unable to find said basis therefore. It is unclear that applicants had possession of said concepts at the time of the original filing.

Claims 63-65, including the claims dependent thereon are deemed as having new matter. More specifically, the basis for the limitation "each cavitation zone having a height dimension and cavitation occurs at a cavitation column height in the cavitation zones; wherein varying the pressure within the plurality of cavitation zones varies the cavitation column height in each cavitation zone" has not been pointed out by applicant and the examiner has been unable to find said basis therefore. It is unclear that applicants had possession of said concepts at the time of the original filing.

Claims 622 and 74, including the claims dependent thereon are deemed as having new matter. More specifically, the basis for the limitation "cavitation zones adjacent to and displaced from at least a portion of the flow path" has not been pointed out by applicant and the examiner has been unable to find said basis therefore. It is unclear that applicants had possession of said concepts at the time of the original filing.

Furthermore, the examiner has not been able to find the new limitations of claims 71-73 and 76-78. Said limitations are considered new matter.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

8. Claim 69 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Since the void zones may change, i.e., a void zone across a rotating drum, and applicant's independent claim 37 does not set forth adequate structure, the limitation to align said outlet is indefinite.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

10. Claim 62 is rejected under 35 U.S.C. 102(e) as being anticipated by Wootan et al, US 6,386,751. Wootan et al (abstract; figures 1-8b; column 1, lines 49-54; column 2, lines 1-12, 45-54; column 3, lines 30-49 and 62 et seq; column 4, lines 35-38 and 65-66; column 5, lines 44 et seq and line 66 to column 6, lines 32 and lines 55-57; and claims) discloses methods of employing a diffuser / emulsifier for the oxidation of a variety of materials. Said diffuser / emulsifier induces cavitations in the fluid mixture.

Art Unit: 1712

Wootan et al (column 3, line 62, to column 4, lines 2; and column 5, lines 44 et seq) discloses the use of ozone, air or oxygen. Wootan et al (column 5, line 66, to column 6, line 32) discloses applications in treatment of wastewater by oxidizing toxic materials, hydrogenation of oils, mixing fuels and gasses/liquids resulting in higher fuel economy.

11. Claim 62 is rejected under 35 U.S.C. 102(b) as being anticipated by Matsuoka Mitsuhsa, JP 60 226594 A, as evidenced by the corresponding Patent Abstracts of Japan and Derwent Abstract, AN 1985-321700. Matsuoka Mitsuhsa (abstracts) discloses processing fuel oil and a gas such as air to generate a fuel in an excited state to enhance combustion thereof by processing through an apparatus that generates induced cavitation. Said apparatus comprising a rough-rotor. The void zone adjacent to the cavitation zone would have been inherent to the use of the Matsuoka Mitsuhsa processes.

Double Patenting

12. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to

Art Unit: 1712

be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

13. Claims 37-41, 46-48, 51-57, 59-67, 69 and 71-78 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-23 of copending Application No. 11/062,534. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claims are generic and encompass the co-pending claims.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

14. Claims 37-41, 46-48, 51-57, 59-67, 69 and 71-78 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5 of U.S. Patent No. 6,627,784. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claims are generic and encompass the co-pending claims.

Response to Arguments

15. Applicant's arguments filed December 13, 2006 have been fully considered but they are not persuasive.

16. The rejections over Wootan and Mitsuha have been withdrawn at this time for the claims employing the new limitation, "the flow path is substantially free of cavitation", since said limitation is deemed new matter.

17. Applicants set forth that the cavitation zone is:

Art Unit: 1712

A space, referred to herein as a cavitation zone is formed between the periphery of the rotor and the cylindrical wall of the housing chamber.

The term "cavitation zone" is used herein to refer to the region between the outer periphery of the rotor wherein the bores are formed and the cylindrical wall of the housing chamber. This is where the most intense cavitation activity occurs. It should be understood, however, that cavitation may occur, albeit with less intensity, in regions other than this space such as, for example, in the reservoir or region between the sides or faces of the rotor and the housing. Thus "cavitation zone" is used herein to refer to the region of most intense cavitation, but should not be interpreted as an implication that cavitation cannot occur at some level in other regions of the hydrosonic mixer.

This would clearly include the flow path. Applicants' amendments appear inconsistent with the original disclosure and appear to be new matter.

18. Applicant's arguments with respect to claims 37-57, 59-69 and 71-78 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion


19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The patent documents to John H. Hallman are cited of interest.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (571) 272-1089. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1712

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Daniel S. Metzmaier
Primary Examiner
Art Unit 1712

DSM